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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,322	11/14/2001	John R. Webster	84561	6882

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WASHINGTON, DC 20036-3307

EXAMINER

KYLE, MICHAEL J

ART UNIT	PAPER NUMBER
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3676

DATE MAILED: 04/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/987,322

Applicant(s)

WEBSTER, JOHN R.

Examiner

Michael J Kyle

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 8-22, 24 and 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 23, 26 and 27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1.5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The examiner notes than elected claims 17 and 24 recite limitations that are not included in the elected species shown in figure 2. The examiner has not considered these claims in this Office Action.

#### ***Claim Objections***

2. Claim 1 is objected to because of the term “non-rotating structures” in line 3 of the claim. The examiner suggests changing this to --non-rotating structure--, to maintain consistency with terminology throughout the claim.

3. Claim 1 is objected to because of the phrase “this seal land” in the last line of the claim. It is unclear what “this” refers to.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 23, 26, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Bainachi et al (U.S. Patent No. 5,700,011). Bainachi et al discloses a seal for providing sealing between at least two separate and differing pressure zones and between a rotating structure (6) and non-rotating structures (1), comprising first (14) and second (13b) sealing means, the first sealing means comprising first and second seal lands (14a, 14b) positioned either side of a rotating seal member (6), the seal lands being connected together via connecting means (8a, 8b),

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the connecting means being movably mounted on the non-rotating structure and arranged to be movable so as to accommodate relative movement of the rotating and non-rotating structures, the second seal means (13b, column 4, lines 3-5)) being arranged and positioned to provide a seal between the non-rotating structure and the first seal land (14a) positioned in a lower pressure zone such that the pressure around this seal land is controlled.

6. With respect to claim 23, Bainach et al discloses the connecting means to comprise a yoke.

7. With respect to claims 26 and 27, Bainachi et al discloses the rotating sealing member (6) to comprise a rotating sealing fin (the sealing member is the sealing fin) attached to a rotor (2) of a gas turbine and the non rotating structure comprises an adjacent static structure of the gas turbine engine. With respect to claim 27, Whitford (U.S. Patent No. 5,064,205) is cited as an evidentiary reference to show that seals of this type may be used with a compressor rotor also (column 2, lines 4-6).

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2, 3, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bainachi et al in view of Whitford (U.S. Patent No. 5,064,205). Bainachi et al recites all of the limitations of claim 1, but does not disclose the seal lands to comprise two opposing magnets

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arranged to repel one another or that the rotating seal member comprises a rotating sealing disc of a conducting material.

10. Whitford teaches seal lands (5, 6, 7, 8) to comprise two opposing magnets arranged to repel one another and a rotating seal member comprises a rotating sealing disc (2) of a conducting material in order to closely control and maintain a small clearance around the complete circumference of the rotating sealing disc. By leaving a clearance, wear of the parts is decreased and service life is increased. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Bainachi et al as taught by Whitford in order to control and maintain a small clearance around the circumference of the rotating sealing disc, thereby reducing wear, and increasing service life.

11. With respect to claim 3, Bainachi et al discloses that the sealing lands are rings.

12. With respect to claim 7, Bainachi et al discloses the rotating sealing disc (6) is located in an intermediate pressure zone.

13. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bainachi et al in view of Whitford as applied to claim 3 above, and further in view of Tong (U.S. Patent No. 6,431,550). Neither Bainachi et al nor Whitford discloses the magnetic rings comprise segmented rings, or that there are seals provided between the segments of the magnetic rings.

14. Tong teaches a segmented sealing ring to provide for thermal expansion and contraction of the ring and a seal (52) provided between the segments in order to minimize leakage through the gaps between the rings. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the magnetic rings of Whitford and Bainachi et

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al as taught by Tong in order to provide for thermal expansion and contraction of the rings and to minimize leakage through the gaps between the ring segments.

*Conclusion*

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited to further show the state of the art with respect to magnetic and variable clearance sealing assemblies: Sugimura, Albers et al, Whitford (U.S. Patent No. 5,137,286), Sanders, and Webster et al.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Kyle whose telephone number is 703-305-3614. The examiner can normally be reached on Monday - Friday, 8:30 am - 5:00 pm.

17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on 703-308-3179. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

18. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2168.

mk  
April 19, 2003

  
Anthony Knight  
Supervisory Patent Examiner  
Tech Center 3600